the lead plate can fail to reliably weld to the bottom plate. For example, with the electrode assembly inserted into the external case, if the lead plate is separated from the bottom plate, the bottom plate of the external case will fuse but the lead pipe will not, and the energy beam will not be able to reliably weld the lead plate to the bottom plate. In addition, if foreign material or contamination is between the lead plate and bottom plate, the energy beam will also fail to make a reliable weld. In particular, whether or not the lead plate is welded to the bottom plate and what kind of attachment is made, cannot be determined from outside this type of battery. Since evaluation of battery quality is difficult, it is extremely important to make weld attachments more reliably.

Please replace the paragraph beginning at page 3, line 8, with the following rewritten paragraph:

This invention was developed to solve these types of problems. It is thus a primary object of the present invention to provide a battery that can reliably weld a lead plate to an external case.

Please replace the paragraph beginning at page 3, line 17, with the following rewritten paragraph:

The battery has an electrode assembly inserted into a cylindrical external case. A lead plate connected to the electrode assembly is welded to the inner surface of the external case by an energy beam applied from outside the external case.

Please replace the paragraph beginning at page 3, line 25, with the following rewritten paragraph:

A battery of this configuration has the characteristic that the lead plate can be reliably welded to the external case. This is because the projection in the external case makes reliable contact with the lead plate. The external case and lead plate can be reliably welded by application

of an energy beam, such as a laser, to the projection which has its inner surface in contact with the lead plate. In particular, a battery, in which the lead plate and external case can be reliably contacted and welded, also reliably prevents separation of the lead plate and external case due to mechanical shock.

Please replace the paragraph beginning at page 4, line 3, with the following rewritten paragraph:

In the battery of the present invention, the projection is disposed in a still more preferable arrangement for contact and weld to the lead plate by curving the projecting surface to its center or by making a conical shaped projection.

Please replace the paragraph beginning at page 4, line 7, with the following rewritten paragraph:

Further, the lead plate of the battery can be provided with a flexible deforming piece, and the projection in the external case can be welded to this flexible deforming piece. In addition, the flexible deforming piece can jut outwards towards the projection in the external case to further improve connection of the lead plate and the external case.

Please replace the paragraph beginning at page 5, line 7, with the following rewritten paragraph:

Fig. 11 is a cross section view showing the disposition of a lead plate for welding to an electrode assembly.

Please replace the paragraph beginning at page 6, line 4, with the following rewritten paragraph:

As shown in Figs. 3 and 4, the external case 35 is provided with a projection 35a in the region where the lead plate 34 is welded and fixed to the external case 35. A projection 35a is provided on the bottom plate 35A of the external case 35 of the battery shown in the figures, and the lead plate 34 is welded to this projection 35a. As shown in the bottom view of Fig. 6, the external case 35 is provided with a projection 35a at the center of the bottom plate 35A. An external case 35 provided with a projection 35a in this location has the characteristic that the location for welding of the lead plate 34 by an energy beam operation such as laser welding can be easily and accurately aligned. This is because the location for energy beam weld attachment of the lead plate 34 does not change regardless of the position to which the external case 35 has rotated. However, there is no requirement to locate the projection at the center of the bottom plate. Further, the projection is not required to be provided on the bottom plate. For example, as shown in Fig. 7, the projection may also be provided on a side-wall of the external case 75. However, regardless of where the projection is provided, the lead plate 74 is welded to the projection 75a.

Please replace the paragraph beginning at page 6, line 21, with the following rewritten paragraph:

The outside diameter of the projection 35a is designated to an optimum value considering the area of the weld. If the diameter of the projection 35a is made small, the top of the projection can be reliably welded to the lead plate. However, if the projection diameter is too small, the weld area between the lead plate and the external case becomes smaller.

A

Please replace the paragraph beginning at page 6, line 26, with the following rewritten paragraph:

Making the projection 35a jut high up from the inner surface of the external case 35 improves the situation for welding of the projection 35a and the lead plate 34. However, making the projection 35a project high upwards pushes the electrode assembly 31, which inserts into the external case 35 upwards. Consequently, this makes it necessary to reduce the height of the electrode assembly 31, and this reduces the real capacity of the electrode assembly.

Please replace the paragraph beginning at page 8, line 23, with the following rewritten paragraph:

As shown in Fig. 8, the lead plate 34, which connects to the bottom of the electrode assembly 31, is provided with a U-shaped cut-out 312, and a flexible deforming piece 34A is provided inside this cut-out 312. The flexible deforming piece 34A protrudes outwards towards the projection 35a in the external case 35. The flexible deforming piece 34A is approximately at the center of the lead plate 34, and is welded to the external case 35 projection 35a.

Please replace the paragraph beginning at page 8, line 29, with the following rewritten paragraph:

Since lead plates 33, 34 in a battery of this configuration can connect to the electrode assembly 31 at a plurality of locations, the battery has excellent high current characteristics. This is because internal resistance can be made small. Further, a battery of this configuration also has the characteristic that the lead plate 34 can be reliably welded to the bottom plate 35A via an energy beam. This is because the electrode assembly 31 can be inserted into the external case 35, and the lead plate 34 can be put in intimate contact with the bottom plate 35A of the external case.

Please replace the paragraph beginning at page 9, line 7, with the following rewritten paragraph:

However, the battery of the present invention is not limited to a lead plate, which connects the electrode assembly to the external case, according to the structure described above. For example, the lead plate may also have a band shape as shown in Fig. 12. This lead plate 124 connects to exposed core material of an electrode, extends out from the bottom of the electrode assembly, and its end welds to the inner surface of the external case. This type of lead plate 124 may also extend out from the side of the electrode assembly weld to a side wall of the external case as shown in Fig. 7.

Please replace the paragraph beginning at page 9, line 16, with the following rewritten paragraph:

The lead plate 34 is welded to the inner surface of the external case 35. An energy beam such as a laser beam or an electron beam, etc. is used as a method of welding the lead plate 34. The energy beam fuses both the external case 35 and the lead plate 34 to weld the lead plate 34 and the external case 35. As shown in Fig. 4, a laser beam is directed at a wide region, which includes the entire projection 35a, to weld attach the lead plate 34 and the external case 35.

Please replace the paragraph beginning at page 10, line 26, with the following rewritten paragraph:

An electrode assembly rolled into a spiral shape with a separator between electrodes and lead plates 33, 34 welded to both ends was inserted in the external case 35 with the above configuration. Lead plates 33, 34 with a plurality of holes 39 and projections 310 provided at the periphery of the holes 39 were used. The electrode assembly was inserted into the external case, a laser was applied to the indentation corresponding to the projection 35a provided in the bottom surface of the external case, and the lead plate 34 was welded to the external case 35. As a

coating on the laser weld region at the outer bottom surface of the external case, Hitachi Manufacturing LTD. [JP-K28] was applied. After welding the lead plate 33 connected to the top surface of the electrode assembly to the sealing lid 37, an electrolyte was added, and the opening in the external case was closed off with the sealing lid 37 to complete fabrication of a nickel cadmium battery.

Please replace the paragraph beginning at page 11, line 11, with the following rewritten paragraph:

Nickel cadmium batteries were fabricated by the same process as embodiment 1, except the lead plate connected to the bottom surface of the electrode assembly had no flexible deforming piece. The region of the lead plate for welding to the external case was planar for this battery.

Please replace the paragraph beginning at page 11, line 23, with the following rewritten paragraph:

From these test results, batteries of embodiment 1 and embodiment 2 had lead plates and external cases reliably connected. In particular, there was no failure of the weld between the lead plate and external case for batteries of embodiment 1.

IN THE CLAIMS:

Please cancel claims 1-15 and add new claims 16-35 as follows:

16. (New) A battery comprising:

an electrode assembly;

an external case having a bottom, an inner surface and an outer surface, said external case surrounding said electrode assembly, said inner surface of said external case having an inwardly protruding projection, said outer surface of said external case having an inwardly protruding recess, said recess located so as to correspond with said projection; and